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5938-03

Mr. Mark Steyaert
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Subject: 2008 Post-Construction California Gnatcatcher Monitoring Report for
The Crossings at Carlsbad, City of Carlsbad, San Diego County,
California. Permit # TE051248-2

Dear Mr. Steyaert:

This report documents the results of five months of general monitoring conducted by Dudek, for the federally listed threatened coastal California gnatcatcher (*Polioptila californica californica*; CAGN) at The Crossings at Carlsbad (formerly known as Carlsbad Municipal Golf Course). This monitoring was conducted within all CAGN suitable habitat areas (disturbed and undisturbed phases of coastal sage scrub and *Baccharis* scrub) within the golf course construction site and coastal sage scrub mitigation areas as defined on the As-built Mitigation Map (Dudek 2007).

The intent of the surveys was to inventory all CAGN on site. This is the second comprehensive CAGN monitoring survey since completion of construction. The first post-construction CAGN monitoring survey was conducted in 2007 and served as the baseline the 2008 survey effort. A pre-construction focused survey for CAGN in the golf course construction footprint was conducted by LSA, Inc. (1992), utilizing accepted protocol survey methods.

SPECIES ACCOUNTS

Coastal California Gnatcatcher

Polioptila californica californica

USFWS: Threatened

CDFG: Species of Special Concern

The gnatcatcher genus *Polioptila* is a distinctive group of small (5–7 grams), long-tailed, insectivorous songbirds. The coastal California gnatcatcher (*Polioptila californica californica*) is one of three recognized subspecies within the species *Polioptila californica*. The coastal California gnatcatcher was previously a widespread resident of coastal sage scrub (CSS) habitats

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in much of southern California and northern Baja California. Historically, the subspecies was recorded from coastal areas of southern Ventura County, California to approximately 30° north latitude in Baja California. Eastern limits of the species' United States distribution historically were the western portions of San Bernardino and Riverside counties.

The CAGN is a year-round resident of coastal sage scrub habitats, especially below 950-foot elevation in coastal regions and higher inland, and on slopes less than 40%. Individuals are rarely seen outside areas of regular residency. Coastal sage scrub vegetation is composed of relatively low-growing (mostly 3–6 feet tall), summer deciduous, and succulent plants. Characteristic plants of the CSS community include California sagebrush (*Artemisia californica*), various species of sage (*Salvia* spp.), California buckwheat (*Eriogonum fasciculatum*), California encelia (*Encelia californica*), prickly pear and cholla cactus (*Opuntia* spp.). Coastal Sage scrub habitats that are occupied by the California gnatcatcher are typically dominated by California sagebrush and ashy-leaf buckwheat, although in some portions of its range (e.g., western Riverside County) other plant species may be more abundant. The coastal sage scrub plant community also supports a wide variety of small insects which are preyed upon by the coastal California gnatcatcher including, true bugs, beetles, caterpillars, scale insects, wasps, ants, flies, moths, small grasshoppers, and spiders.

CAGN maintain year-round territories. Adult gnatcatchers appear to be site tenacious, generally remaining in the same territory for their entire adult life. Home ranges tend to be highly variable in size and relatively large for a small songbird. The boundaries of the defended territory are usually sharply defined during the breeding season. During fall and winter, the home range of an established pair expands to include areas not used or defended during the breeding season. Territory size and population density varies between coastal and inland habitats with known home range sizes from 2–40 acres. Territory boundaries usually follow natural physical features such as ridges, roadways, trails, or where there is an abrupt change in vegetation composition (e.g., sage scrub-chaparral interface).

The breeding season of the coastal California gnatcatcher extends from late February through late July with the peak of nest initiations occurring from mid-March through mid-May. Both sexes participate in all phases of the nesting cycle. Nest predation or failure due to unknown causes is common, with most pairs usually making several nesting attempts per year. Occasionally, gnatcatchers successfully fledge two and sometimes even three broods in one season. Nests are usually constructed over a 2- to 10-day period, usually in a dense low shrub less than four feet above the ground. The nest is a compact cup of grass, bark strips, leaves, spider webs, plant down, and other items and is lined with fine plant fibers, feathers, and animal hair. Average clutch size is 3–4 eggs. Incubation and nestling periods are approximately 14 days

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each. Juveniles become independent of their parents 3–5 weeks after leaving the nest; usually dispersing between 0.5 and 6 miles from their natal territories. The majority of juveniles likely perish before they are able to acquire a mate and establish a territory. The range of variation in juvenile and adult survivorship is consistent with that of other small songbirds. The coastal California gnatcatcher appears to be particularly sensitive to cold, wet weather or drought conditions, and likely suffers higher mortality rates when those conditions persist. Primarily the loss, fragmentation and degradation of CSS habitats; depredation by human subsidized predators (e.g., cats, raccoons, and scrub jays); and brown-headed cowbird parasitism in certain populations threaten the coastal California gnatcatcher.

LOCATION

The Crossings at Carlsbad project area is located approximately one mile to the east of Interstate 5 in the City of Carlsbad (Figure 1). Palomar Airport Road forms the southern boundary, Hidden Valley Road forms the western boundary, and Faraday Avenue forms the northern boundary (Figure 2). The project area lies in the U.S. Geological Survey (USGS) 7.5 minute topographic maps, Encinitas and San Luis Rey quadrangles on unsectioned lands; Township 12 South, Range 4 West.

The site is previously farmed and undeveloped land with relatively steep canyons and drainages which drain southerly toward Palomar Airport Road and northerly toward an unnamed tributary which drains through Macario Canyon and into Agua Hedionda Lagoon approximately 1 mile west of the site. Elevations range from approximately 100 feet above mean sea level (AMSL) along the southern and northern project boundaries to 300 feet AMSL in the middle of the project site.

METHODS

CAGN surveys were conducted during the CAGN breeding season, at approximately four-week intervals between March 12 and July 11, 2008 (Table 1). Surveys were conducted by Dudek biologist Paul M. Lemons (PML; TE051248-2). The surveys were conducted to determine CAGN occupancy of the study area and to monitor annual CAGN reproductive success for each pair during the breeding season.

Table 1
2008 Survey Conditions – Coastal California Gnatcatcher Monitoring
The Crossings at Carlsbad

| Survey Pass | Date | Biologist's Initials | Time | Survey Conditions (skies, wind, temp) |
|-------------|---------|----------------------|-----------|--|
| 1 | 3/12/08 | PML | 0725-1200 | 62-73 degrees Fahrenheit (F); 70%-85% cloud cover (cc), 0-5 mile per hour (mph) winds. |
| | 3/13/08 | PML | 0730-1230 | 60-70 F; 100%-80% cc; 0-2 mph winds. |
| 2 | 4/21/08 | PML | 0630-1240 | 60-72 F, 10%-0% cc, 0-6 mph winds. |
| | 4/22/08 | PML | 0640-1240 | 64-75 F, 0% cc, 0-6 mph winds. |
| 3 | 5/12/08 | PML | 0700-1200 | 55-60 F, 100% cc, 0-4 mph winds. |
| | 5/13/08 | PML | 0700-1200 | 57-66 F, 50%-0% cc, 0-6 mph winds, 7-10 mph gusts. |
| 4 | 6/9/08 | PML | 0700-1230 | 61-72 F, 100%-60% cc, 0-3 mph winds. |
| | 6/11/08 | PML | 0650-1140 | 59-72 F, 100%-0% cc, 0-6 mph winds. |
| 5 | 7/10/08 | PML | 0700-1130 | 64-73 F, 100%-90% cc, 0-5 mph winds, 6-8 mph gusts. |
| | 7/11/08 | PML | 0640-1100 | 63-74 F, 100%-80% cc, 0-4 mph winds, 4-6 mph gusts. |

The surveys consisted of walking meandering transects within suitable habitat and mitigation areas to determine locations of occupied CAGN territories and the breeding status of CAGN pairs. Interstitial golf course sage scrub revegetation areas also were surveyed. All identified CAGN territories and subsequent nest locations were mapped in the field onto 1 inch = 200 feet topographic maps of the site (Figures 4-12). While surveying, a tape recording of CAGN vocalizations was played approximately every 50-100 feet when in suitable habitat to induce CAGN responses. Once a CAGN was detected, tape-playback stopped to minimize harassment. During monitoring of occupied CAGN territories, tape-playback was restricted to pair detection when the birds could not otherwise be found, or areas where CAGN had not yet been found. For most pairs, tape playback was not necessary after the first visit because their location was known. If they were difficult to locate, then tape playback was used.

Breeding season territorial boundaries were established for each pair based on the observed CAGN use area during all monitoring passes in 2008. Other monitoring activities included the recording of all other wildlife identified on site during monthly surveys (Appendix A). Binoculars (8x42) were used to aid in monitoring and the detection and identification of all encountered species.

The surveys were generally conducted in conformance with current USFWS survey guidelines for NCCP enrolled areas. Weather conditions, time of day, and season were appropriate for the detection of CAGN and other wildlife (Table 1). Monitoring was conducted under authority of Federal 10a (16 USC 1533 [d] - 50 CFR 17.32) Permit Number TE051248-2 (Paul Lemons).

RESULTS

General

A total of 20 adult gnatcatchers (10 pairs) were determined to occur within the project area during the 2008 breeding season, an increase of two pairs from the 2007 breeding season. All suitable habitat within the project area was visited five times between March and July 2008.

An index map of CAGN use areas is presented in Figure 3. Approximate CAGN observed use areas, nest locations and family group locations are presented in Figures 4–12.

Reproductive Monitoring

In 2008, basic reproductive monitoring was conducted for all ten CAGN pairs located in the study area with the goal of estimating annual reproductive success for each pair and for the project area as a whole. Because monitoring visits were scheduled at approximately four-week intervals beginning in March, it was not feasible to determine the exact number of nesting attempts or the total number of eggs or nestlings associated with each pair. However, based on the number of nests located, nesting activity observations, fledgling observations and intervals between cohorts, it is estimated that a total of 11 nesting attempts were made by CAGN on site in 2008. This resulted in 16 fledglings observed as family groups with adult pairs.

Table 2 summarizes the observed reproductive data collected for each CAGN breeding pair. Specific data for each CAGN pair, as well as pair summaries are provided in Tables 3–12.

CAGN Nests

In total, six nests were located within The Crossings at Carlsbad project area in 2008. This number likely underestimates the total number of nests built by the ten breeding pairs on site, as a nest was not detected for all pairs observed with fledglings (i.e., Holes 1, 3, 5, 10, 18 pairs). No direct incidences of brown-headed cowbird nest parasitism were observed on site in 2008 and brown-headed cowbird trapping was occurring onsite between March 15 and July 15, 2008. However, a total of 63 juvenile cowbirds were trapped on the project site in 2008, indicating that successful nest parasitism is occurring.

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Table 2
Observed 2008 California Gnatcatcher Reproductive Data*

| Pair ID | Nesting Attempts | Nests Located | Nest Failures | Nest Successes | Breeding Behavior Not Displayed | Total Fledglings |
|--------------|------------------|---------------|---------------|----------------|---------------------------------|------------------|
| Hole 1 Pair | 1 | 0 | 0 | 1 | 0 | 3 |
| Hole 2 Pair | 2 | 2 | 1 | 1 | 0 | 3 |
| Hole 3 Pair | 2 | 1 | 1 | 1 | 0 | 2 |
| Hole 5 Pair | 1 | 0 | 0 | 1 | 0 | 2 |
| Hole 6 Pair | 0 | 0 | 0 | 0 | 1 | 0 |
| Hole 7 Pair | 2 | 2 | 2 | 0 | 0 | 0 |
| Hole 10 Pair | 1 | 0 | 0 | 1 | 0 | 2 |
| Hole 17 Pair | 1 | 1 | 0 | 1 | 0 | 2 |
| Hole 18 Pair | 1 | 0 | 0 | 1 | 0 | 2 |
| Creek Pair | 0 | 0 | 0 | 0 | 1 | 0 |
| Total | 11 | 6 | 4 | 7 | 2 | 16 |

*Includes observed data only, and does not include estimated nesting attempts. Nests were not located for all nesting attempts.

Table 3
The Crossings at Carlsbad
2008 California Gnatcatcher Data
Hole 1 Pair

| | Nest | Date | CAGN Observed ¹ | Nest Contents ² | Status ³ | Outcome ⁴ | Fledged |
|--------------|----------|-----------------|----------------------------|----------------------------|---------------------------------------|----------------------|----------|
| Hole 1 Pair | — | 3/13/08 | 1M, 1F | — | Pair observed foraging | — | — |
| | — | 4/21/08 | 1M, 1F | — | Pair observed foraging | — | — |
| | — | 5/12/08 | 1M | — | Male observed foraging | — | — |
| | — | 6/11/08 | 1M, 1F, 3 fledglings | — | Pair observed foraging for fledglings | Successful | 3 |
| | — | 7/11/08 | 1M, 1F, 3 juveniles | — | Pair observed foraging with juveniles | — | — |
| Total | 0 | 5 visits | 1M, 1F, 3 juveniles | — | — | 1 success | 3 |

Hole 1 Pair Summary:

The Hole 1 Pair made at least one successful breeding attempt in 2008. During the first three visits, the pair was fairly quiet and secretive. During the 5/12/08 visit, only the male CAGN was observed and was very quiet. It was suspected that nesting activity was taking place during this visit. It's possible that additional nesting attempts were made but not observed.

¹ CAGN Observed contains a record of all gnatcatchers located in a territory during a particular site visit.

² Nest Contents provides a quantitative record (e.g., four eggs) of nest contents based on visual inspection as well as a non-quantitative description of nest contents when a nest inspection was not done but type of contents were known based on timing and behavior (e.g., eggs or nestlings).

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- ³ Status is generally based on direct observation of individual birds, breeding pairs and/or their active nests. Unknown status means a breeding pair was not located during as site visit and/or the pair's breeding status could not be determined.
- ⁴ Outcome provides a record of whether a particular nesting attempt failed or succeeded. If a nest failed, the specific category of failure (e.g., abandoned or depredated) is provided. If the cause of failure is unknown, the general term "Failed" is given.

Table 4
The Crossings at Carlsbad
2008 California Gnatcatcher Data
Hole 2 Pair

| | Nest t | Date | CAGN Observed ¹ | Nest Contents ² | Status ³ | Outcome ⁴ | Fledged |
|-------------|-----------|----------|-------------------------------|-------------------------------|---------------------------------------|-------------------------|---------|
| Hole 2 Pair | — | 3/13/08 | 1M | — | Male observed foraging. | — | — |
| | 1 | 4/22/08 | 1M, 1F | — | Pair observed nest building. | Failed (nest abandoned) | — |
| | — | 5/12/08 | 1M, 1F | — | Male incubating new nest. | — | — |
| | — | 6/11/08 | 1M, 1F, 3 nestlings | — | Pair observed foraging for nestlings | Success | — |
| | — | 7/10/08 | 1M, 1F, 3 juveniles | — | Pair observed foraging with juveniles | — | 3 |
| Total | 1 | 5 visits | 1M, 1F, 3 Juveniles | — | — | 1 Failure, 1 Success | 3 |

Hole 2 Pair Summary:

The Hole 2 Pair made at least two nesting attempts in 2008. This pair was observed nest building on 4/22/08, then the 5/12/08 visit revealed that the nest had been destroyed, however the male CAGN was observed incubating eggs on a new nest during the same visit. This pair was then observed with 3 or 4 nestlings during the 6/11/08 visit. The Hole 2 Pair was observed foraging with three juveniles during the final visit in July 2008.

- ¹ CAGN Observed contains a record of all gnatcatchers located in a territory during a particular site visit.
- ² Nest Contents provides a quantitative record (e.g., four eggs) of nest contents based on visual inspection as well as a non-quantitative description of nest contents when a nest inspection was not done but type of contents were known based on timing and behavior (e.g., eggs or nestlings).
- ³ Status is generally based on direct observation of breeding pairs and/or their active nests. Unknown status means a breeding pair was not located during as site visit and/or the pairs' breeding status could not be determined.
- ⁴ Outcome provides a record of whether a particular nesting attempt failed or succeeded. If a nest failed, the specific category of failure (e.g., abandoned or depredated) is provided. If the cause of failure is unknown, the general term "Failed" is given.

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Table 5
The Crossings at Carlsbad
2008 California Gnatcatcher Data
Hole 3 Pair

| | Nest | Date | CAGN Observed ¹ | Nest Contents ² | Status ³ | Outcome ⁴ | Fledged |
|-------------|------|----------|----------------------------|----------------------------|-------------------------------------|-------------------------|---------|
| Hole 3 Pair | — | 3/13/08 | Not detected | — | Unknown | — | — |
| | 1 | 4/22/08 | 1M, 1F | — | Pair observed nest building. | Failed (nest abandoned) | — |
| | — | 5/13/08 | Not detected | — | Unknown | — | — |
| | — | 6/11/08 | 1M, 1F, 2 juveniles | — | Pair observed foraging w/ juveniles | Success | 2 |
| | — | 7/11/08 | 1M, 1F | — | Pair observed foraging | — | — |
| Total | 1 | 5 visits | 1M, 1F, 2 Juveniles | — | — | 1 Failure, 1 Success | 2 |

Hole 3 Pair Summary:

The Hole 3 Pair made at least two nesting attempts in 2008 (only one nest was located). This pair was observed nest building in April, then the May visit revealed that the nest had been abandoned. This pair was then observed with two juveniles during the 6/11/08 visit, indicating that they had at least one successful nesting attempt in 2008. The Hole 3 Pair was observed foraging without the two juveniles during the final visit in July 2008. It's likely that the two juveniles had dispersed prior to the July visit.

¹ CAGN Observed contains a record of all gnatcatchers located in a territory during a particular site visit.

² Nest Contents provides a quantitative record (e.g., four eggs) of nest contents based on visual inspection as well as a non-quantitative description of nest contents when a nest inspection was not done but type of contents were known based on timing and behavior (e.g., eggs or nestlings).

³ Status is generally based on direct observation of breeding pairs and/or their active nests. Unknown status means a breeding pair was not located during as site visit and/or the pairs' breeding status could not be determined.

⁴ Outcome provides a record of whether a particular nesting attempt failed or succeeded. If a nest failed, the specific category of failure (e.g., abandoned or depredated) is provided. If the cause of failure is unknown, the general term "Failed" is given.

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Table 6
The Crossings at Carlsbad
2008 California Gnatcatcher Data
Hole 5 Pair

| | Nest | Date | CAGN Observed ¹ | Nest Contents ² | Status ³ | Outcome ⁴ | Fledged |
|-------------|------|----------|----------------------------|----------------------------|---------------------------------------|----------------------|---------|
| Hole 5 Pair | — | 3/13/08 | 1M, 1F | — | Pair observed foraging | — | — |
| | — | 4/22/08 | 1M, 1F | — | Pair observed foraging | — | — |
| | — | 5/12/08 | 1M, 1F | — | Pair observed foraging | — | — |
| | — | 6/11/08 | 1M, 1F, 2 fledglings | — | Pair observed foraging for fledglings | Successful | 2 |
| | — | 7/11/08 | Not detected | — | Unknown | — | — |
| Total | — | 5 visits | 1M, 1F, 2 fledglings | — | — | 1 success | 2 |

Hole 5 Pair Summary:

The Hole 5 pair made at least one successful nesting attempt in 2008, resulting in the observation of two fledglings during the 6/11/08 visit. The Hole 5 pair was observed foraging throughout their use area during survey visits between March and May. The Hole 5 pair and it's fledglings were not observed during the July 2008 visit. It's possible additional nesting attempts were made but not observed.

- ¹ CAGN Observed contains a record of all gnatcatchers located in a territory during a particular site visit.
- ² Nest Contents provides a quantitative record (e.g., four eggs) of nest contents based on visual inspection as well as a non-quantitative description of nest contents when a nest inspection was not done but type of contents were known based on timing and behavior (e.g., eggs or nestlings).
- ³ Status is generally based on direct observation of breeding pairs and/or their active nests. Unknown status means a breeding pair was not located during as site visit and/or the pairs' breeding status could not be determined.
- ⁴ Outcome provides a record of whether a particular nesting attempt failed or succeeded. If a nest failed, the specific category of failure (e.g., abandoned or depredated) is provided. If the cause of failure is unknown, the general term "Failed" is given.

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Table 7
The Crossings at Carlsbad
2008 California Gnatcatcher Data
Hole 6 Pair

| | Nest | Date | CAGN Observed ¹ | Nest Contents ² | Status ³ | Outcome ⁴ | Fledged |
|-------------|------|----------|-------------------------------|-------------------------------|--------------------------------|----------------------|---------|
| Hole 6 Pair | — | 3/13/08 | 1M, 1F | — | Pair observed foraging | — | — |
| | — | 4/22/08 | 1M | — | Male only observed foraging | — | — |
| | — | 5/13/08 | Not detected | — | Unknown | — | — |
| | — | 6/11/08 | Not detected | — | Unknown | — | — |
| | — | 7/11/08 | Not detected | — | Unknown | — | — |
| Total | 0 | 5 visits | 1M, 1F | — | — | — | — |

Hole 6 Pair Summary:

The Hole 6 pair was only observed during the first survey pass, and only the male was observed during the second pass in May. There were no observations or detections of the Hole 6 pair during the May, June or July visits. The Hole 6 pair was never observed displaying nesting behavior during the 2008 surveys. It is possible that nesting attempts were made but not observed.

- ¹ CAGN Observed contains a record of all gnatcatchers located in a territory during a particular site visit.
- ² Nest Contents provides a quantitative record (e.g., four eggs) of nest contents based on visual inspection as well as a non-quantitative description of nest contents when a nest inspection was not done but type of contents were known based on timing and behavior (e.g., eggs or nestlings).
- ³ Status is generally based on direct observation of breeding pairs and/or their active nests. Unknown status means a breeding pair was not located during as site visit and/or the pairs' breeding status could not be determined.
- ⁴ Outcome provides a record of whether a particular nesting attempt failed or succeeded. If a nest failed, the specific category of failure (e.g., abandoned or depredated) is provided. If the cause of failure is unknown, the general term "Failed" is given.

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Table 8
The Crossings at Carlsbad
2008 California Gnatcatcher Data
Hole 7 Pair

| | Nest | Date | CAGN Observed ¹ | Nest Contents ² | Status ³ | Outcome ⁴ | Fledged |
|-------------|------|----------|----------------------------|----------------------------|----------------------------|----------------------|---------|
| Hole 7 Pair | 1 | 3/13/08 | 1M, 1F | — | Pair nest building | Failed | 0 |
| | 1 | 4/21/08 | 1M, 1F | 2 nestlings | Pair bringing food to nest | Failed | 0 |
| | — | 5/13/08 | 0 | — | Pair not observed/detected | — | — |
| | — | 6/11/08 | 0 | — | Pair not observed/detected | — | — |
| | — | 7/11/08 | 0 | — | Pair not observed/detected | — | — |
| Total | 2 | 5 visits | 1M, 1F | 2 nestlings | — | 2 failed | 0 |

Hole 7 Pair Summary:

The Hole 7 Pair made at least two nesting attempts in 2008; however the pair was not successful in either nesting attempt. During the 5/13/08 visit, the nest was discovered to be destroyed and the pair was not observed. The pair was easily detected during the first two visits- calling, nest-building and foraging for their nestlings. Because this pair was not detected during the last three visits, it is assumed that they left the area or were preyed upon. Its possible additional nesting attempts were made but not observed.

- ¹ CAGN Observed contains a record of all gnatcatchers located in a territory during a particular site visit.
- ² Nest Contents provides a quantitative record (e.g., four eggs) of nest contents based on visual inspection as well as a non-quantitative description of nest contents when a nest inspection was not done but type of contents were known based on timing and behavior (e.g., eggs or nestlings).
- ³ Status is generally based on direct observation of breeding pairs and/or their active nests. Unknown status means a breeding pair was not located during as site visit and/or the pairs' breeding status could not be determined.
- ⁴ Outcome provides a record of whether a particular nesting attempt failed or succeeded. If a nest failed, the specific category of failure (e.g., abandoned or depredated) is provided. If the cause of failure is unknown, the general term "Failed" is given.

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Table 9
The Crossings at Carlsbad
2008 California Gnatcatcher Data
Hole 10 Pair

| | Nest | Date | CAGN Observed ¹ | Nest Contents ² | Status ³ | Outcome ⁴ | Fledged |
|--------------|------|----------|----------------------------|----------------------------|---|----------------------|---------|
| Hole 10 Pair | — | 3/12/08 | 1M, 1F | — | Pair observed nest building | — | — |
| | — | 4/21/08 | 1M, 1F, 2 nestlings | — | Pair observed foraging for nestlings | — | — |
| | — | 5/13/08 | 1M, 1F, 2 fledglings | — | Family group. Pair observed foraging for fledglings | Successful | 2 |
| | — | 6/9/08 | 1M, 1F, 2 juveniles | — | Pair observed foraging with juveniles | — | — |
| | — | 7/10/08 | 0 | — | Pair not observed/detected | — | — |
| Totals | 0 | 5 visits | 1M, 1F, 2 juveniles | — | — | 1 success | 2 |

Hole 10 Pair Summary:

The Hole 10 pair made at least one successful nesting attempt in 2008, resulting in the observation of two fledglings during the 5/13/08 visit. The Hole 10 pair and their juvenile offspring were observed foraging throughout their use area during the survey visit on 6/9/08. The Hole 10 pair and its juvenile offspring were not observed during the 7/10/08 visit. It's possible additional nesting attempts were made but not observed.

- ¹ CAGN Observed contains a record of all gnatcatchers located in a territory during a particular site visit.
- ² Nest Contents provides a quantitative record (e.g., four eggs) of nest contents based on visual inspection as well as a non-quantitative description of nest contents when a nest inspection was not done but type of contents were known based on timing and behavior (e.g., eggs or nestlings).
- ³ Status is generally based on direct observation of breeding pairs and/or their active nests. Unknown status means a breeding pair was not located during a site visit and/or the pairs' breeding status could not be determined.
- ⁴ Outcome provides a record of whether a particular nesting attempt failed or succeeded. If a nest failed, the specific category of failure (e.g., abandoned or depredated) is provided. If the cause of failure is unknown, the general term "Failed" is given.

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Table 10
The Crossings at Carlsbad
2008 California Gnatcatcher Data
Hole 17 Pair

| | Nest | Date | CAGN Observed ¹ | Nest Contents ² | Status ³ | Outcome ⁴ | Fledged |
|--------------|------|----------|----------------------------|----------------------------|---|----------------------|---------|
| Hole 17 Pair | — | 3/12/08 | 1M | — | Male observed foraging | — | — |
| | — | 4/22/08 | 1M, 1F | — | Pair observed foraging | — | — |
| | 1 | 5/13/08 | 1M, 1F | Nest with 2 eggs | Pair observed incubating eggs. | — | — |
| | — | 6/9/08 | 1M, 1F, 2 fledglings | — | Family group. Pair observed foraging for fledglings | Successful | 2 |
| | — | 7/10/08 | 1M, 1F, 2 juveniles | — | Pair observed foraging with juveniles | — | — |
| Total | 1 | 5 visits | 1M, 1F, 2 juveniles | 2 eggs | — | 1 Success | 2 |

Hole 17 Pair Summary:

The Hole 17 pair made at least one nesting attempt in 2008, successfully producing at least two fledglings. The pair was observed foraging as a family group during the final visit in July. It's possible additional nesting attempts were made but not observed.

- ¹ CAGN Observed contains a record of all gnatcatchers located in a territory during a particular site visit.
- ² Nest Contents provides a quantitative record (e.g., four eggs) of nest contents based on visual inspection as well as a non-quantitative description of nest contents when a nest inspection was not done but type of contents were known based on timing and behavior (e.g., eggs or nestlings).
- ³ Status is generally based on direct observation of breeding pairs and/or their active nests. Unknown status means a breeding pair was not located during as site visit and/or the pairs' breeding status could not be determined.
- ⁴ Outcome provides a record of whether a particular nesting attempt failed or succeeded. If a nest failed, the specific category of failure (e.g., abandoned or depredated) is provided. If the cause of failure is unknown, the general term "Failed" is given.

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Table 11
The Crossings at Carlsbad
2008 California Gnatcatcher Data
Hole 18 Pair

| | Nest | Date | CAGN Observed ¹ | Nest Contents ² | Status ³ | Outcome ⁴ | Fledged |
|--------------|------|----------|----------------------------|----------------------------|---|----------------------|---------|
| Hole 18 Pair | — | 3/12/08 | 1M, 1F | — | Pair observed foraging | — | — |
| | — | 4/21/08 | 1M, 1F, 2 fledglings | — | Family group. Pair observed foraging for fledglings | Successful | 2 |
| | — | 5/13/08 | 1M, 1F, 2 juveniles | — | Pair observed foraging with juveniles | — | — |
| | — | 6/9/08 | 0 | — | Pair not observed/detected | — | — |
| | — | 7/10/08 | 0 | — | Pair not observed/detected | — | — |
| Total | — | 5 visits | 1M, 1F, 2 juveniles | — | — | 1 Success | 2 |

Hole 18 Pair Summary:

The Hole 18 pair made at least one nesting attempt in 2008, producing at least two juveniles. This pair was not detected during the June and July visits. It's possible that this pair dispersed from the area after successfully breeding. It's possible additional nesting attempts were made but not observed.

¹ CAGN Observed contains a record of all gnatcatchers located in a territory during a particular site visit.

² Nest Contents provides a quantitative record (e.g., four eggs) of nest contents based on visual inspection as well as a non-quantitative description of nest contents when a nest inspection was not done but type of contents were known based on timing and behavior (e.g., eggs or nestlings).

³ Status is generally based on direct observation of breeding pairs and/or their active nests. Unknown status means a breeding pair was not located during a site visit and/or the pairs' breeding status could not be determined.

⁴ Outcome provides a record of whether a particular nesting attempt failed or succeeded. If a nest failed, the specific category of failure (e.g., abandoned or depredated) is provided. If the cause of failure is unknown, the general term "Failed" is given.

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Table 12
The Crossings at Carlsbad
2008 California Gnatcatcher Data
Creek Pair

| | Nest | Date | CAGN Observed ¹ | Nest Contents ² | Status ³ | Outcome ⁴ | Fledged |
|------------|------|----------|----------------------------|----------------------------|------------------------|----------------------|---------|
| Creek Pair | — | 3/12/08 | 1M, 1F | — | Pair observed foraging | — | — |
| | — | 4/21/08 | Not detected | — | Unknown | — | — |
| | — | 5/13/08 | Not detected | — | Unknown | — | — |
| | — | 6/9/08 | Not detected | — | Unknown | — | — |
| | — | 7/10/08 | Not detected | — | Unknown | — | — |
| Total | 0 | 5 visits | 1M, 1F | — | — | — | 0 |

Creek Pair Summary:

The Creek pair was only observed once on 3/12/08 and did not display breeding behavior during this observation. It is likely that the Creek pair moved to the west, where additional coastal sage scrub habitat exists outside of The Crossings property. It's possible that nesting attempts were made but not observed and occurred within suitable habitat to the west of the project site.

- ¹ CAGN Observed contains a record of all gnatcatchers located in a territory during a particular site visit.
- ² Nest Contents provides a quantitative record (e.g., four eggs) of nest contents based on visual inspection as well as a non-quantitative description of nest contents when a nest inspection was not done but type of contents were known based on timing and behavior (e.g., eggs or nestlings).
- ³ Status is generally based on direct observation of breeding pairs and/or their active nests. Unknown status means a breeding pair was not located during a site visit and/or the pairs' breeding status could not be determined.
- ⁴ Outcome provides a record of whether a particular nesting attempt failed or succeeded. If a nest failed, the specific category of failure (e.g., abandoned or depredated) is provided. If the cause of failure is unknown, the general term "Failed" is given.

CAGN Fledglings

A total of 16 fledglings were observed in the study area from seven successful nesting attempts out of 11 total attempts. Of the seven successful nesting attempts, five nests produced two fledglings per nest, and the other two nests produced three fledglings.

Eight of the ten total pairs on site were observed displaying breeding behavior (i.e., nest building, incubating eggs, family groups) during 2008 monitoring visits. These eight breeding pairs include the Hole 1, Hole 2, Hole 3, Hole 5, Hole 7, Hole 10, Hole 17, and Hole 18 pairs. Of the eight breeding CAGN pairs on site, more than one nesting attempt was observed by three of these pairs (Hole 2, Hole 3, and Hole 7 pairs) in 2008. The Creek pair and Hole 6 pair did not display breeding behavior during 2008 monitoring visits.

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HABITAT

On-site, suitable habitats are represented by disturbed and undisturbed phases of coastal sage scrub and *Baccharis* scrub.

Coastal sage scrub is dominated by California sagebrush, California buckwheat, coast goldenbush (*Isocoma veneta*) and coyote brush (*Baccharis pilularis*), with lesser amounts of lemonadeberry (*Rhus integrifolia*), black sage (*Salvia mellifera*) and occasional stands of chamise (*Adenostoma fasciculatum*). Any disturbed areas of coastal sage scrub on site is evidenced by the presence of weedy invasive annuals such as black mustard (*Brassica nigra*), sweet fennel (*Foeniculum vulgare*), slender oats (*Avena barbata*) and brome grass (*Bromus* spp.). *Baccharis* scrub consists of stands of coyote bush with patches of invasive plants such as black mustard, slender oats and fennel.

Baccharis scrub is an upland community that is closely related to coastal sage scrub. *Baccharis* scrub typically develops in drainage bottoms or mesic floodplains following disturbance to the native plant community. This community is dominated by coyote brush with a few successional elements of the former native community, including California sagebrush, California buckwheat, coast goldenbush, or other disturbance-tolerant native plants. The understory usually includes a variety of non-native herbs and grasses.

Revegetation and habitat creation efforts continued throughout the project area during the 2008 breeding season. Gnatcatchers utilized suitable interior golf course habitats that were not impacted by construction. It is possible that as more suitable interior habitat is planted and becomes better established and mature, additional CAGNs will reside and nest.

BROWN-HEADED COWBIRDS

Four traps were operated from March 15 to July 15, 2008 by Dudek. Dudek removed 209 cowbirds in 2008, including 91 males, 55 females, and 63 juveniles. In addition to cowbirds, 782 non-target birds were captured and released. A 2008 Brown-headed Cowbird Trapping Program Report was prepared separately.

DISCUSSION

Distribution

During the 2008 breeding season, The Crossings project area supported ten pairs of CAGN (Figures 3–12). This is an increase from eight pairs detected during 2007 breeding season surveys.

Reproductive Success

There were eight breeding pairs on site during the 2008 breeding season. Of the eight breeding pairs, seven of them made successful nesting attempts. Five of these successful nesting attempts produced two fledglings per nest, while two attempts produced three fledglings per nest.

A total of 16 fledglings (an average of 2.0 fledglings/breeding pair) were produced on site during the 2008 breeding season. This is a 533% increase from 2007, which produced 3 fledglings (0.375 fledglings/pair).

CONCLUSION

In 2008, The Crossings at Carlsbad supported ten CAGN pairs, eight of which were documented breeding pairs producing a total of 16 fledglings. This 533% increase in fledglings from 2007 to 2008 can be attributed to a more adequate rainfall total and seasonal distribution than was experienced in 2007 during the wet season, which contributes to good habitat condition and likely an abundance of food resources. These are vital factors for a successful CAGN breeding season. Three of the ten pairs failed to produce any fledges, including the Hole 6, Hole 7, and Creek pairs. It is possible, however, that each of these three pairs could have made breeding attempts offsite as each are located along the project boundary and adjacent to suitable habitat offsite.

The Crossings at Carlsbad CAGN population will benefit from ongoing habitat creation and enhancement efforts, which will undoubtedly increase the on-site carrying capacity for CAGN.

Mr. Mark Steyaert

Subject: 2008 Post-Construction California Gnatcatcher Monitoring Report for the Crossings at
Carlsbad, City of Carlsbad, San Diego County, California

Please contact me 760.479.4238 or Michael Sweesy at 760.479.4253 with any questions or comments regarding this report.

Sincerely,



Paul Lemons

Wildlife Biologist

Att: Figures 1-12
Appendix A - Cumulative Wildlife List

cc: Recovery Permit Coordinator, US Fish & Wildlife Service
Michael Sweesy, Dudek
Brock Ortega, Dudek

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APPENDIX A

*List of Wildlife Species
Observed or Detected at the Project Site*

Appendix A
List of Wildlife Species Observed or Detected at the Project Site

WILDLIFE SPECIES -VERTEBRATES

AMPHIBIANS

HYLIDAE - TREEFROGS

Hyla regilla - Pacific treefrog

REPTILES

IGUANIDAE - IGUANID LIZARDS

Sceloporus graciosus - sagebrush lizard

Sceloporus occidentalis - western fence lizard

TEIIDAE - WHIPTAIL LIZARDS

Cnemidophorus tigris - western whiptail

VIPERIDAE - VIPERS

Crotalus viridis - western rattlesnake

BIRDS

ARDEIDAE - HERONS

Ardea herodias - great blue heron

Egretta thula - snowy egret

ANATIDAE - WATERFOWL

Anas platyrhynchos - mallard

CATHARTIDAE - NEW WORLD VULTURES

Cathartes aura - turkey vulture

Appendix A
List of Wildlife Species Observed or Detected at the Project Site

ACCIPITRIDAE - HAWKS

Accipiter cooperii - Cooper's hawk
Buteo jamaicensis - red-tailed hawk

PHASIANIDAE - PHEASANTS & QUAILS

Callipepla californica - California quail

RALLIDAE - RAILS & GALLINULES

Fulica americana - American coot

CHARADRIIDAE - PLOVERS

Charadrius vociferus - killdeer

LARIDAE - GULLS & TERNS

Larus sp. - gull

COLUMBIDAE - PIGEONS & DOVES

* *Columba livia* - rock dove
Zenaida macroura - mourning dove

CUCULIDAE - CUCKOOS & ROADRUNNERS

Geococcyx californianus - greater roadrunner

APODIDAE - SWIFTS

Aeronautes saxatalis - white-throated swift

TROCHILIDAE - HUMMINGBIRDS

Calypte anna - Anna's hummingbird
Calypte costae - Costa's hummingbird

PICIDAE - WOODPECKERS

Colaptes auratus - northern flicker

Appendix A
List of Wildlife Species Observed or Detected at the Project Site

Picoides nuttallii - Nuttall's woodpecker

TYRANNIDAE - TYRANT FLYCATCHERS

Myiarchus cinerascens - ash-throated flycatcher

Sayornis nigricans - black phoebe

Sayornis saya - Say's phoebe

Tyrannus vociferans - Cassin's kingbird

Tyrannus verticalis - western kingbird

HIRUNDINIDAE - SWALLOWS

Petrochelidon pyrrhonota - cliff swallow

Stelgidopteryx serripennis - northern rough-winged swallow

CORVIDAE - JAYS & CROWS

Apelocoma californica - western scrub-jay

Corvus brachyrhynchos - American crow

Corvus corax - common raven

AEGITHALIDAE - BUSHTITS

Psaltirparus minimus - bushtit

TROGLODYTIDAE - WRENS

Thryomanes bewickii - Bewick's wren

REGULIDAE - KINGLETS

Regulus calendula - ruby-crowned kinglet

SYLVIIDAE - GNATCATCHERS

Poliophtila californica - California gnatcatcher

Appendix A
List of Wildlife Species Observed or Detected at the Project Site

TIMALIIDAE - LAUGHINGTHRUSH AND WRENTIT

Chamaea fasciata - wrenit

MIMIDAE - THRASHERS

Mimus polyglottos - northern mockingbird

Toxostoma redivivum - California thrasher

STURNIDAE - STARLINGS

* *Sturnus vulgaris* - European starling

VIREONIDAE - VIREOS

Vireo bellii - Bell's vireo

PARULIDAE - WOOD WARBLERS

Geothlypis trichas - common yellowthroat

EMBERIZIDAE - BUNTINGS & SPARROWS

Melospiza melodia - song sparrow

Pipilo crissalis - California towhee

Pipilo maculatus - spotted towhee

Zonotrichia leucophrys - white-crowned sparrow

CARDINALIDAE - CARDINALS AND GROSBEAKS

Passerina caerulea - blue grosbeak

ICTERIDAE - BLACKBIRDS & ORIOLES

Agelaius phoeniceus - red-winged blackbird

Euphagus cyanocephalus - Brewer's blackbird

Molothrus ater - brown-headed cowbird

FRINGILLIDAE - FINCHES

Carpodacus mexicanus - house finch

Carduelis psaltria - lesser goldfinch

Appendix A
List of Wildlife Species Observed or Detected at the Project Site

PASSERIDAE - OLD WORLD SPARROWS

* *Passer domesticus* - house sparrow

MAMMALS

LEPORIDAE - HARES & RABBITS

Sylvilagus bachmani - brush rabbit

SCIURIDAE - SQUIRRELS

Spermophilus beecheyi - California ground squirrel

GEOMYIDAE - POCKET GOPHERS

Thomomys bottae - Botta's pocket gopher

MURIDAE - RATS & MICE

Neotoma lepida - desert woodrat

CANIDAE - WOLVES & FOXES

Canis latrans - coyote

PROCYONIDAE - RACCOONS & RELATIVES

Procyon lotor - common raccoon

MUSTELIDAE - WEASELS, SKUNKS, & OTTERS

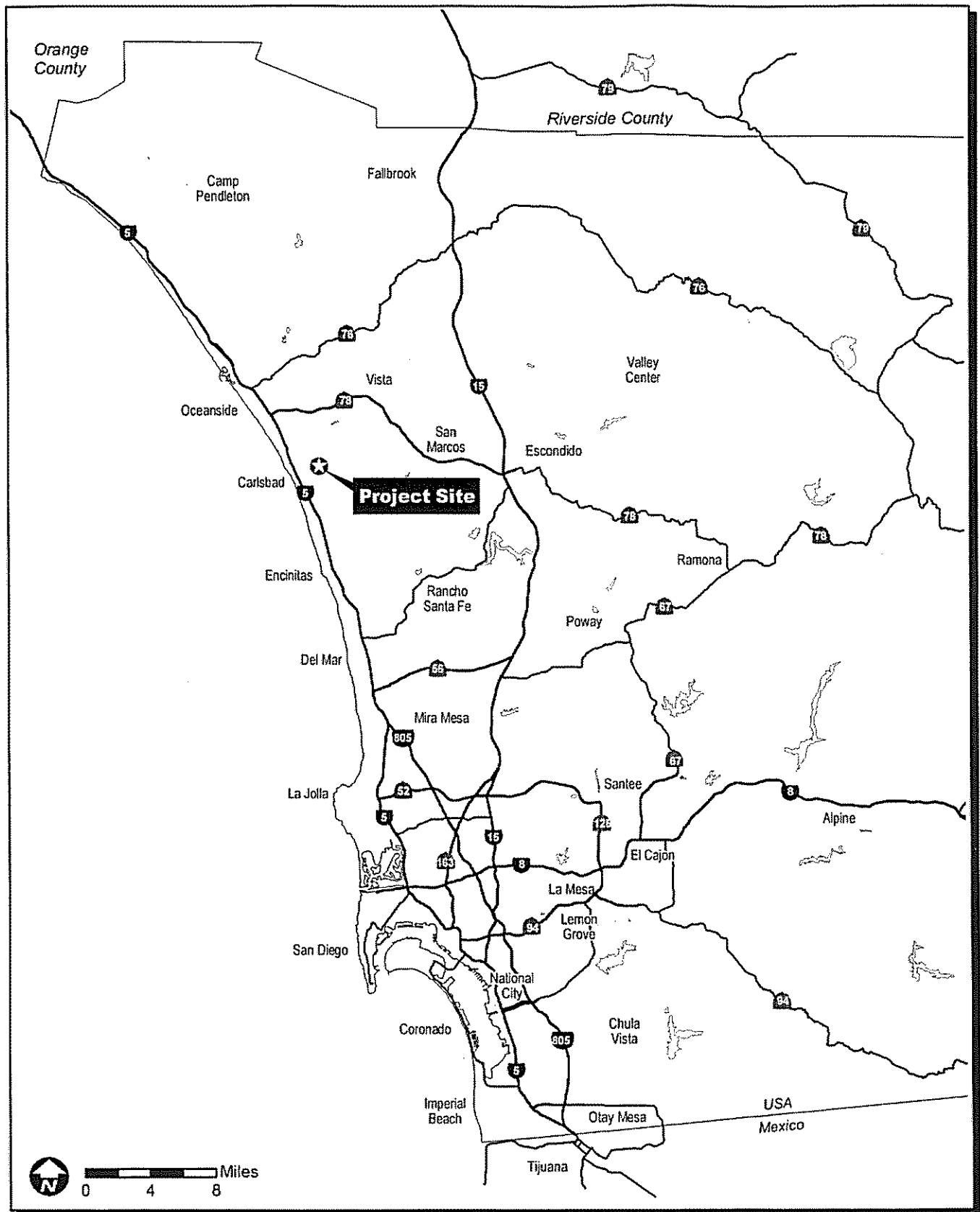
Mephitis mephitis - striped skunk

Mustela frenata - long-tailed weasel

FELIDAE - CATS

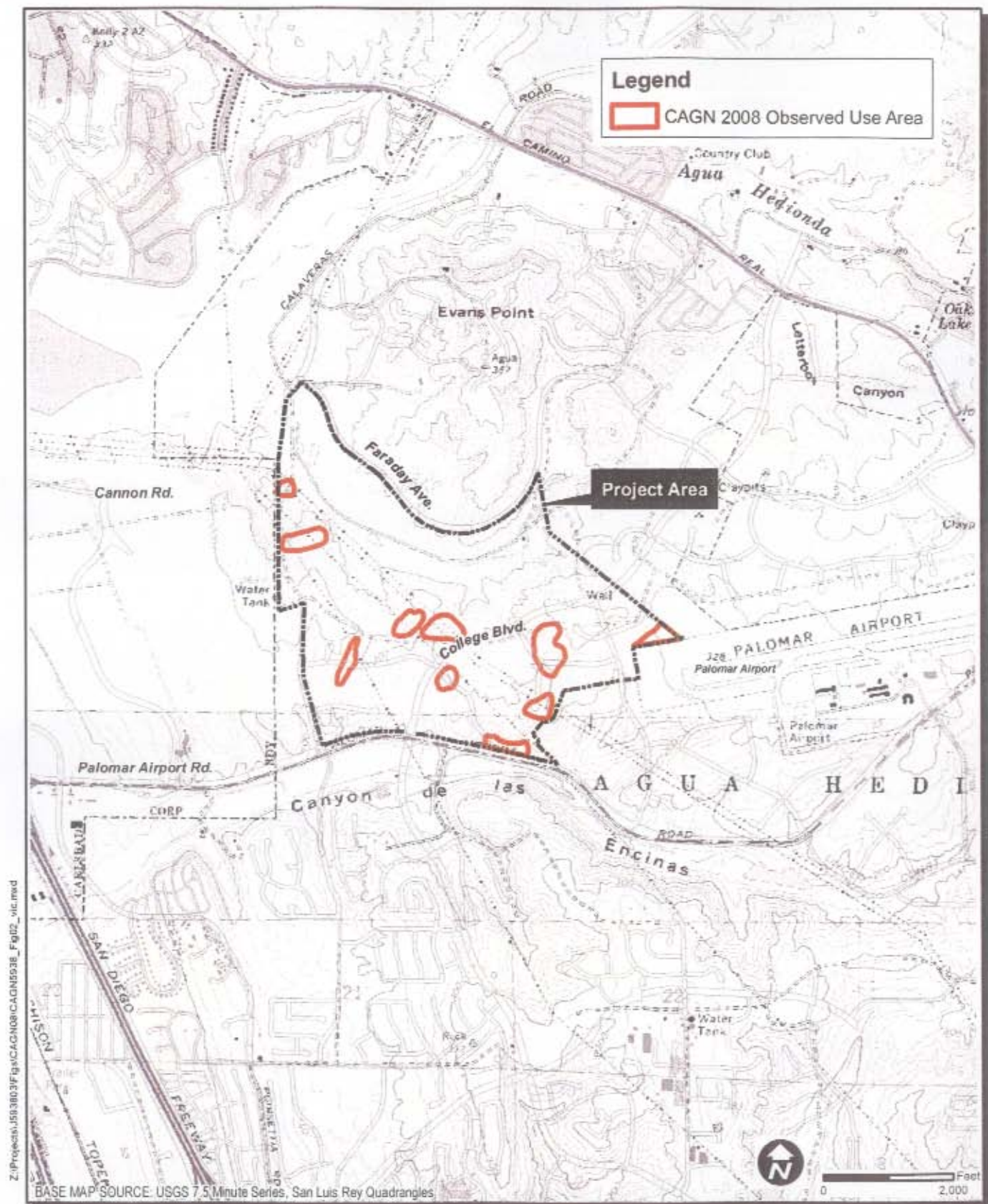
Lynx rufus - bobcat

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The Crossings at Carlsbad - 2008 CAGN Monitoring Report
Regional Map

FIGURE
1



The Crossings at Carlsbad - 2008 CAGN Monitoring Report
Vicinity Map

FIGURE
2



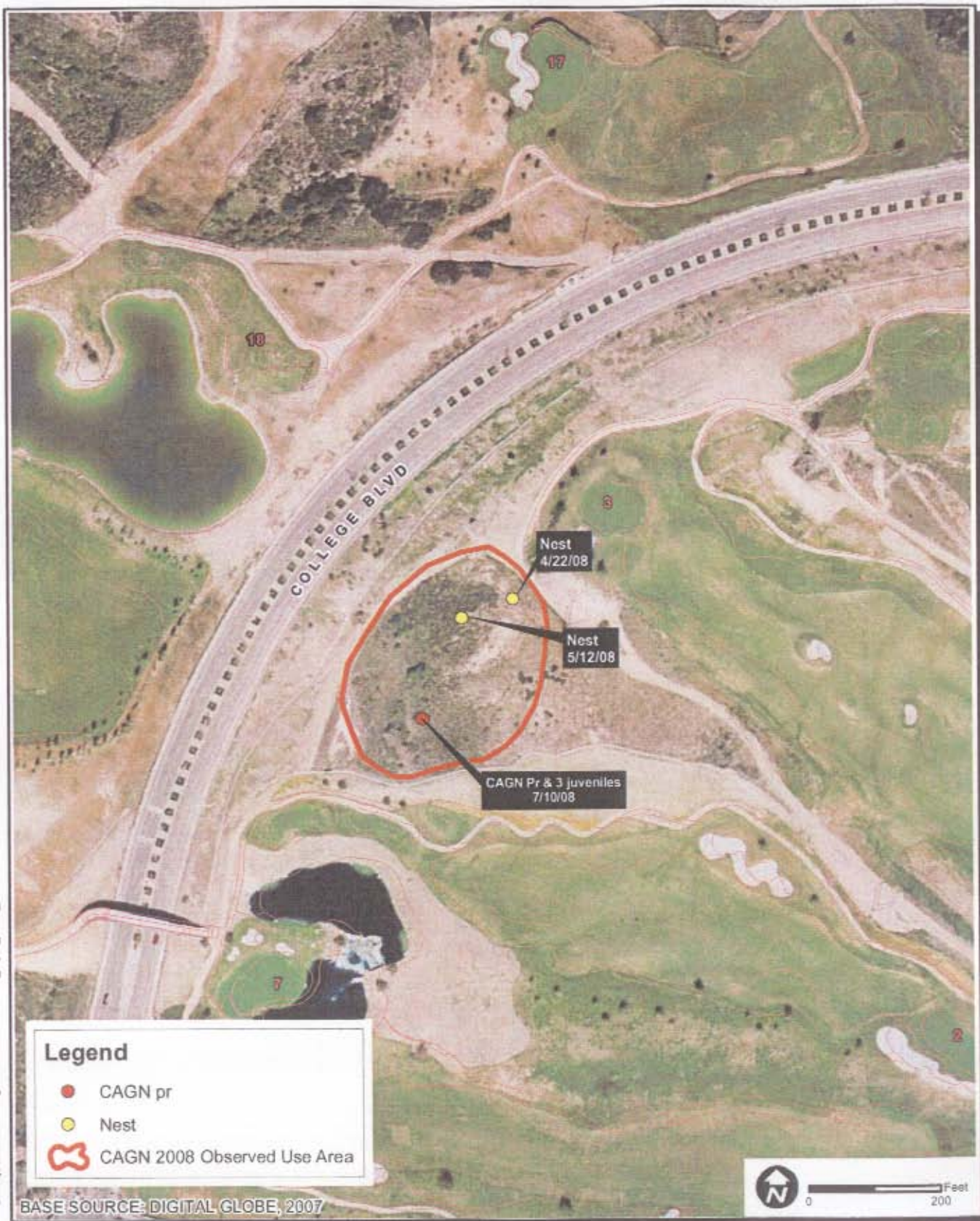
The Crossings at Carlsbad - 2008 CAGN Monitoring Report
Observed Use Area Index Map

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The Crossings at Carlsbad - 2008 CAGN Monitoring Report
Hole 1 Pair Observed Use Area

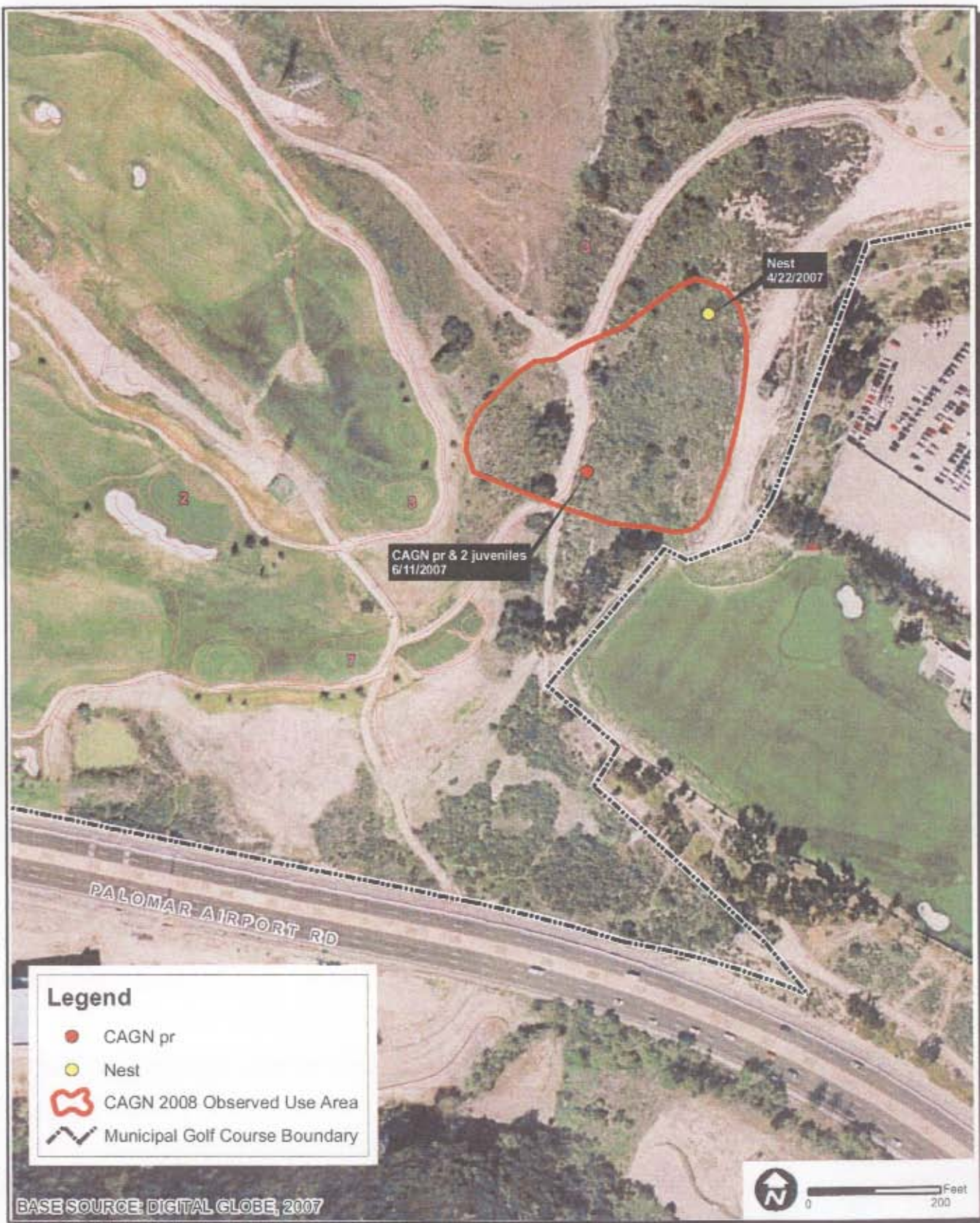
FIGURE
4



The Crossings at Carlsbad - 2008 CAGN Monitoring Report
Hole 2 Pair Observed Use Areas

FIGURE
5

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The Crossings at Carlsbad - 2008 CAGN Monitoring Report
Hole 3 Pair Observed Use Area

FIGURE
6

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The Crossings at Carlsbad - 2008 CAGN Monitoring Report
Hole 6 Pair Observed Use Area

FIGURE
8

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The Crossings at Carlsbad - 2008 CAGN Monitoring Report
Hole 7 Pair Observed Use Area

FIGURE
9

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The Crossings at Carlsbad - 2008 CAGN Monitoring Report
Hole 10 Pair Observed Use Area

FIGURE
10

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The Crossings at Carlsbad - 2008 CAGN Monitoring Report
Hole 17 Pair & Hole 18 Pair Observed Use Areas

FIGURE
11

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The Crossings at Carlsbad - 2008 CAGN Monitoring Report
Creek Pair Observed Use Area

FIGURE
12